

Patent application of Dwayne A Horvath
for

1 **TITLE OF THE INVENTION**

2
3 Simulated edged weapon or toy with element actuated indicating device.
4

5 **CROSS REFERENCE TO RELATED APPLICATIONS** Not Applicable
6

7 **FEDERALLY SPONSORED RESEARCH** Not Applicable
8

9 **SEQUENCE LISTING OR PROGRAM** Not Applicable
10

11 **BACKGROUND OF THE INVENTION -- FIELD OF INVENTION**
12

13 The present invention relates generally to an apparatus simulating an edged weapon or toy
14 wherein the same is arranged to alert contact.
15

16 **DISCUSSION OF PRIOR ART**
17

18 A large number of groups teach knife self-defense and combat training, including martial
19 arts schools, law enforcement and the military. Most groups use wooden knives, rubber
20 knives, or dull aluminum knives. More recently marking devices have been used show
21 where the element makes contact, however a marking device stains, not only on ones
22 clothing but also on the mat and anything else it touches.
23

24 Some exercises start with the knife touching a body part simulating a threat, in this case,
25 the ink marking devices would leave a mark on ones throat or arm before the defensive
26 exercise begins and would not be realistic. These marking devices also need to be refilled
27 or a coating reapplied to the device. When marking devices are not in use, a sheath is also
28 needed to prevent marking.

1 These devices being used in a game or competition also have no way to convey a strike
2 electronically to an indicating device(s) or wireless remote receiver(s). Since a judge or
3 judges are required to visually confirm the first strike, this can be hard to see in the fast
4 movement of competition thereby being subject to human error.

5
6 Other dull element training or toy knives have no means to convey contact at all. In a class
7 or group setting, the instructor has no way of readily seeing who is being cut or stabbed to
8 correct mistakes.

9
10 In different training situations or games the need arises to have a variety of blades or
11 elements mirroring the situation. Harder contact requires softer elements, simulated threats
12 require a firmer element, and some situations require a combination of both. None of the
13 present inventions offer the element or blades to be interchanged.

14
15 Thus, the need exists for a simulated sharp edged weapon or toy that is more realistic in
16 alerting of strikes or contact with the edge, and teaches safe proper handling of a sharp
17 edged weapon.

18
19 U.S. Pat. No. 6,497,619 to Dowdy discloses a simulated striking apparatus that uses a
20 chalk or marking agent applied to the edge of the apparatus. A protective body covering or
21 light colored clothing is recommended to visually see the mark upon contact and needs to
22 be erased. This design suffers from several weaknesses. In training or in a game, action
23 must be stopped to erase the inflicted marks on your protective clothing.

24
25 Many times a mark is delivered to a body part not protected such as a hand, finger, arm,
26 neck, etc. and would also need to be erased if the mark can be seen or is left at all. In
27 competition, strikes can be delivered so quickly thus making it difficult to determine who
28 was struck first without the use of an electronic signaling device. In use when performing
29 training drills, moves or strikes are performed in repetition as well as general self defense

1 drills practiced requiring blade contact to a body part first, making training unrealistic as
2 well as uncomfortable and leaving marks all over ones body.

3
4 US Pat. No 6,352,465 to Hermann, US Pat. No 5,174,756 To Taylor and US Pat. No
5 5,288,274 to Bell discloses ink or fluid used to convey contact and suffers from similar
6 disadvantages as detailed above.

7
8 **OBJECTS OF THE PRESENT INVENTION**

9
10 Accordingly, in view of the foregoing disadvantages in the prior art, it is a general object
11 of the present invention to provide more realism and feedback while maintaining a degree
12 of safety in a simulated sharp edged weapon.

13
14 Accordingly, an object of the invention is to provide a training weapon that produces a
15 clearly recognizable sensory signal or signals.

16
17 Another object of the present invention is to provide a training weapon or toy that can be
18 scored locally or remotely.

19
20 Another object of the present invention is to provide a training weapon or toy that contains
21 a resilient structure increasing the degree of safety of strikes.

22
23 Another object of the present invention is to provide a training weapon or toy that can alert
24 of contact or strike, from a distance.

25
26 Another object of the present invention is to provide a training weapon, toy or game that
27 teaches and alerts in the proper use of a sharp edged weapon.

1 Another object of the present invention is to provide a training weapon or toy with
2 interchangeable elements for different training needs.

3
4 Another object of the present invention is to provide a toy to be used in a game of tag.

5
6 Further objects and advantages of my invention will become apparent from a consideration
7 of the drawings and ensuing description.

8
9 SUMMARY OF THE INVENTION

10
11 A simulated sharp edged weapon or toy comprising a housing, an element mounted in and
12 extending from said housing arranged such that said element has movement in relation to
13 said housing in response to a force upon said element, an electrical circuit mounted in said
14 housing for providing an indication upon activation having a movement sensor actuator
15 mounted in cooperation with said element to turn on at least one indicating device
16 providing indication of movement of said element.

17
18 BRIEF DESCRIPTION OF THE DRAWINGS

19
20 FIG 1, 1A and 1B is an exploded view of the preferred embodiment of the simulated sharp
21 edged weapon or toy according to the present invention;

22
23 FIG 1 is a perspective view of the housing of the preferred embodiment;

24
25 FIG 1A is a perspective view of the element of the preferred embodiment;

26
27 FIG 1B is a perspective view of the housing cover of the preferred embodiment;

28

1 FIG 2 is a perspective view and operation of the housing and element in an unswitched
2 resting position of the preferred embodiment;

3
4 FIG 2A is a perspective view and operation of the housing and element in response to a
5 force upon the edge of the element of the preferred embodiment;

6
7 FIG 2B is a perspective view and operation of the housing and element in response to a
8 force upon the tip of the element of the preferred embodiment;

9
10 FIG 3 is a perspective view of the preferred embodiment for comparison to tang
11 connection shown in FIGS 3A and 3B;

12
13 FIG 3A is a perspective view of the housing and element showing one alternative
14 embodiment of a tang connection;

15
16 FIG 3B is a perspective view of the housing and element showing another alternative
17 embodiment of a tang connection;

18
19 FIG 4 is a perspective view of an alternative embodiment of the simulated sharp edged
20 weapon;

21
22 FIG 4A is a sectional view of the motion sensor actuator of the alternative embodiment;

23
24 FIG 4B is another alternative embodiment of the simulated sharp edged weapon;

25
26 FIG 5 is a perspective view of the housing and element showing another alternative
27 embodiment containing more than one indicating devices;

28

FIG 6 is a perspective view one embodiment of the assembled simulated sharp edged weapon including a scoring device or counter;

FIG 7 is a computer as an indicating device;

FIG 8 is a remote indicating device for indicating or scoring;

FIG 9 is a perspective of one embodiment of an interchangeable element containing a resilient structure and a light source;

FIG 9A is a perspective of one embodiment of an interchangeable element containing a light source illuminating a configuration of cutouts and ports;

FIG 9B is a perspective of one embodiment of an interchangeable element containing a partially light conducting material in combination with a resilient structure;

FIG 9c is a perspective of one embodiment of an interchangeable element containing a partially light conducting material in combination with a resilient structure;

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIGS 1, through 1B, in the preferred embodiment there is shown an exploded view of a housing 12, an element 10, and a housing cover 14.

The housing 10 having a forward end 10a and a rearward end 10b. The housing a can be made from a single piece needing one or two covers 14 secured by screws or rivets through holes 7. The element 12 having a tang 13 is moveably mounted generally to the rearward end 10b in the housing 10 by an elongate shaped cutout 16 generally disposed

1 longitudinally having a forward 16a end, rearward end 16b, and a width 16c. The forward
2 end 16a of the elongate shaped cutout 16 having an opening is connecting to a cutout 18 in
3 the shape of a wedge having a bottom wall 19 and a top wall 19a. The point of intersection
4 being no wider than the width of the elongate shaped cutout 16. The wedged shaped cutout
5 18 continues towards the forward end 10a in the housing 10 intersecting a larger angled
6 wedged shaped cutout 21 and 21a. This larger angled wedged shaped cutout continues
7 through to the outer edges of the housing 10, the overall general appearance resembles the
8 shape of a Y.

9
10 An electrical circuit for providing an indication upon activation is mounted in the housing
11 10. The housing 10 includes a cutout 22 to house an electrical power source 22a generally
12 located near the rearward end of the housing 10b. The power source may be a battery 22a
13 of the flat type 1032 and is replaceable by removing a section 23 of the housing 10 or the
14 cover 14. The battery may be held into place by a battery retainer (not shown). The battery
15 22a is in electrical connection by wiring, (not shown) run within a channel 24 and a
16 channel 25 in the tang 13 connecting in circuit a movement sensor actuator and at least one
17 indicating device.

18
19 In this embodiment, the movement sensor actuator includes a set of contacts 26 and 26a.
20 The contact 26 being arranged within the larger angled wedged shaped cutout 21a and
21 contact 26a on the tang 13 being arranged within the complementary larger angled wedged
22 shaped surface 27a working in cooperation with the element 12 to turn on at least one
23 indicating device. The contact 26 is connected to the battery 22a by wiring not shown run
24 within the channel 24. Contact 26a on the tang 13 is connected to the indicating device by
25 wiring run within the channel 24 crossing to 25 connecting with the battery 22a. The
26 movement sensor actuator generally includes any device, apparatus, mechanism, contacts
27 or switch arranged such that can complete and break a circuit in response to movement
28 from a force upon the element 12.

1 The tang 13 as shown in FIG 1A having a first end 32 and a second end 34 and middle
2 section 20, is shaped in a similar Y shape as stated above to interconnect with the cutout
3 18. The difference being the middle section 20 and the complementary larger angled
4 wedged shaped surface 27 and 27a are sized to provide for compound movement within
5 the cut out 18 discussed below. In this embodiment, the second end 34 consists of a shaped
6 end 17 that is generally the same width and cylindrical in shape for movably
7 interconnecting within the elongate shaped cutout 16 of the housing 10 creating a
8 moveable pivot point.

9
10 A resilient material 28 disposed in an operative location is used to help restore the element
11 to an unswitched resting position. The resilient material 28 may be a shaped wire. The
12 resilient material in this embodiment is operatively disposed in the cutout 18 adjacent the
13 larger angled wedged shaped cutout 21a between the top wall 19a and the tang 13.

14
15 In this embodiment, an LED light source 30 is used as an indicating device mounted within
16 a cutout 31 in the element 12. The cutout 31 can be of different shapes and sizes. The LED
17 is connected to the electrical circuit from wires (not shown) run through ports 25 in the
18 tang 13 from the channel in the housing 24.

19
20 In operation, referring to FIG 2, in an unswitched resting position the tang 13 and housing
21 10 in this embodiment are configured such that the larger angled wedged shaped cutout 21
22 and complementary larger angled wedged shaped surface 27 contact each other creating a
23 cam arrangement. The cam arrangement also produces a restoring force retaining the
24 element in an unswitched resting position. This is due to the mechanics of the angles
25 pulling the element 12 out of the housing 10 in combination with the resilient material 28
26 disposed in an operative location helping to push the element. The shaped end 17 of the
27 tang 13 is resting against the forward end 16a of the elongate cutout 16 keeping the
28 element 12 moveably connected to the housing 10. The element now can not move in a

1 downward direction when a force is applied to 40a on the element 12. The motion sensor
2 actuator, in this embodiment the set of contacts 26 and 26a are in a disconnected state.

3
4 Referring to FIG 2A as force is applied to the element 12 in an upward direction 40, The
5 element 12 senses the force and is free to respond and move up in relation to the housing
6 10, by pivoting around the pivot point 17 and stopping when the tang 13 makes contact
7 with the larger angled wedged shaped cutout 21a. The movement sensor actuator, in this
8 embodiment the contacts 26 and 26a, mounted in cooperation with the element 12 contact
9 each other actuating the electrical circuit providing the indication by completing the circuit
10 with the power source 22a, turning no less than one electrically operated indicating device.
11 This embodiment includes the light source 30, which illuminates the cutout 31. The
12 element 12 is returned to the unswitched resting position as discussed above.

13
14 Referring to FIG 2B as force is applied to the point 41 of the element 12, in a longitudinal
15 direction in relation to the housing 10, the element 12 senses the force and is free to
16 respond and move in an inward direction in combination with rotating up, stopping when
17 the tang 13 makes contact with the larger angled wedged shaped cutout 21 and 21a. The
18 moveable pivot as described above in combination with the cam arrangement creates this
19 compound movement.

20
21 In this embodiment, the sliding action of the larger angled wedged shaped cutout 21 within
22 the housing 10 in cooperation with the complementary larger angled wedged shaped
23 surface 27 on the tang 13 urge the tang to move in a generally transverse direction to the
24 housing 10. This cam arrangement produces the restoring force to retain and return the
25 element 12 to an unswitched resting position as detailed above.

26
27 The movement sensor actuator, in this embodiment the contacts 26 and 26a, mounted in
28 cooperation with the cam arrangement contact each other actuating the electrical circuit
29 providing the indication by completing the circuit with the power source 22a, turning no

1 less than one electrically operated indicating device. This embodiment includes the light
2 source 30, which illuminates the cutout 31. The element 12 is returned to an unswitched
3 resting position as discussed above.

4 While the invention has been described with an emphasis upon a preferred embodiment,
5 many variations of the present invention are possible in light of the above teachings. Thus,
6 it is to be understood that, within the scope of the intended claims, the embodiments are
7 not to be limiting features. Some other embodiments and teachings that can easily be
8 incorporated into the structure of the simulated sharp edged weapon or toy are as follows.

9
10 FIG 3 shows the preferred embodiment described in detail above for comparison.

11 FIG 3A shows a second embodiment for moveably retaining the element 12 in the housing
12 10. This embodiment is similar to the first detailed above with the differences as follows.

13 An elongate slot 45 having a forward end 45a, a rearward end 45b, and a width 45c, is
14 disposed in the tang 13 between the tang first end 32 and second end 34 generally
15 longitudinal to the element 12. In this embodiment the elongate slot is disposed near the
16 second end 34 of the tang 13. A rod 47 being no larger than the elongate slot width 45c
17 extends through the elongate slot 45 at the rearward end 45b and is secured to the housing
18 10.

19
20 In operation this embodiment works the same as the preferred embodiment with the rod 47
21 moveably retaining the element 12 in the housing 10. The rod 47 is disposed through the
22 rearward end 45b of the elongate slot 45 retaining yet allowing the element 12 to move in
23 compound directions in relation to the housing 10 in response to a force on the element.

24
25 FIG 4 shows yet another embodiment of the elongate slot 45 as described above. The
26 elongate slot 45 and rod 47 is disposed on a bias in the tang 13 in relation to the elements
27 longitudinal axis. This bias produces a cam arrangement urging the element 12 to move in
28 a generally transverse direction in relation to the housing 10. The elongate slot 45 and rod

1 47 can be configured in varying locations on the tang 13 to produce desired pivoting and
2 cam arrangements. One example will be explained in detail below.

3
4 FIG 3B shows a third embodiment for moveably retaining the element 12 in the housing 10
5 with the differences as follows. The tang 13 having a top edge 52 and a bottom edge 54
6 and the second end 34 is substantially surrounded by a resilient material 50 allowing for
7 movement of the element 12 in relation to the housing 10. The resilient material 50 having
8 a firmness that allows the element 12 to maintain an unswitched position and a softness
9 that allows the element to be moveable in response to a force on the element 12. The cut
10 out 18 in the housing 10 having a complementary shape of the tang 13 to allow for the
11 resilient material 50 to reside between the tang 13 and the cutout 18. This space allows for
12 movement of the element 12 in one or compound directions as detailed above. This
13 embodiment includes the elongate slot 45 and rod 47 as detailed above to retain the
14 element 12 in the housing 10. In use, all workings will be the same as detailed.

15
16 FIG 4 shows a fourth embodiment using some of the teachings previously described. The
17 same identification will be used as on previously described parts. This embodiment
18 including a movement sensor actuator that includes the battery 22a and a tang 130 being
19 arranged to contact each other completing the circuit upon movement of the element 12.

20
21 The housing rearward end 10b contains a cutout 220 generally located towards the
22 rearward end 10b to house the battery 22a. One side of the cutout is open resembling a C
23 exposing a portion of the battery 22a to a forward extending cutout 180 having a top wall
24 18a and a bottom wall 18b. Cutout 180 continues forward to the larger angled wedged
25 shaped cutout 21 and 21a. The larger angle wedged shaped cutout continues through to the
26 outer edges of the housing 10. The bottom wall 18b is a straight cut from angle 21
27 intersecting the battery cutout 220 opening lower edge. The top wall 18a is a straight cut
28 from angle 21a to a fin shaped end intersecting the battery cutout 220 upper edge. This fin

1 shaped section can be almost any shape required providing space for movement to
2 accommodate the tang 130 having the shaped end 340.

3
4 Tang 130 having a first end 320 a second end 340 and middle 200 is shaped in a similar
5 shape as stated above to fit into the forward cutout 180 allowing space for movement. In
6 this embodiment the elongate slot 45 is disposed on a bias in the middle section 200 of the
7 tang 130 with the forward end 45a being inclined. The rod 47 is disposed through the
8 rearward end 45b of the elongate slot 47 secured to the housing 10.

9 Referring to FIG 4 and 4A. Showing an enlarged side view of the tang second end 340
10 sandwiched between the housing covers 14. Tang 130 second end 340 is stepped and in
11 this embodiment on a bias in relation to the longitudinal line of the tang 130 to provide a
12 tab 56 for the battery 22a to rest on. The side wall 58 of the tab having a curved or bird
13 mouthed shaped portion as shown in FIG 4 is spaced away from the battery 22a providing
14 a shape suitable to make contact with the battery 22a upon predetermined movement of the
15 element 12. The movement sensor actuator in this embodiment includes a contact 60
16 disposed on the tab 56 and a contact 60a disposed on the side wall 58.

17
18 In an unswitched state the larger angles 27 and 21 contact each other effecting the cam
19 arrangement as described in the preferred embodiment. The contact surface 60 is
20 connecting the battery 22a to at least one indicating device by wiring (not shown) run
21 through a port 25. The contact 60a being on the side wall 58 spaced away from the battery
22 22a is not in connection with the battery 22a and is in connection with at least one
23 indicating device by wiring (not shown) run through a port 25. The indicating device in
24 this embodiment is the LED light 30. In this embodiment the resilient material 28 disposed
25 between the bottom wall 18b and the tang 130 adjacent the battery 22a and the shaped wire
26 28a disposed in the larger angle 21a contacting the complementary angle 27a helping
27 retain and restore the element to an unswitched resting position.

1 In use, as force is applied to the element 12 in an upward direction 40, the element 12
2 senses the force and is free to respond and move up in relation to the housing 10, by
3 pivoting around the rod 47 compressing the shaped wire 28a. The tang second end 34
4 moves in a downward direction sliding under the battery 22a compressing the resilient
5 material 28. The movement sensor actuator, in this embodiment the contact surface 60a
6 mounted on the tab side wall 58 makes contact with the battery 22a to actuate the electrical
7 circuit turning no less than one electrically operated indicating device. This embodiment
8 includes the light source 30, which illuminates the cutout 31. The element 12 is returned to
9 an unswitched resting position by the restoring action of the resilient material 28 and 28a
10 as detailed above.

11 As force is applied to the point 41 of the element 12, in a longitudinal direction in relation
12 to the housing 10, the element 12 senses the force and is free to respond and move in an
13 inward and upward direction. The tang second end 340 will move in a downward direction.
14

15 This compound movement is created by the cam arrangement of the larger angled wedged
16 shaped cutout 21, and the complementary larger angled wedged shaped surface 27
17 contacting each other urging the element 12 to slide up in relation to the housing 10
18 effecting a first cam action. Simultaneously, the elongate slot 45 moves around the rod 47
19 effecting a second cam arrangement working in combination with the first to actuate the
20 indicating device quicker.

21
22 The movement sensor actuator, in this embodiment the contact surface 60a mounted on the
23 tab side wall 58 in cooperation with the cam arrangement makes contact with the battery
24 22a to actuate the electrical circuit turning no less than one electrically operated indicating
25 device. This embodiment includes the light source 30, which illuminates the cutout 31. The
26 element 12 is returned to an unswitched resting position by the resilient material 28 and
27 28a as detailed above. Some advantages to this embodiment are fewer parts, ease of
28 assembly due to the wiring being limited to the tang, battery easier to replace, easier to
29 manufacture.

FIG 4B shows a fifth embodiment that is similar to the fourth with some differences as follows. The element 12' simulates a multiple edged element. Angle 21 on the housing having a corresponding angle 21a'. The tang having complementary angles 27 and 27a'. The tang second end 340' is shaped similar to the fourth embodiment with the side wall of the tab 58' resembling a semi circle or V shape being in longitudinal alignment with the tang 130'. This configuration allows contact with the battery 22a on three sides upon predetermined movements of the tang 130'. In this embodiment the elongate slot 45 is disposed longitudinally generally toward the tang first end 320' secured by the rod 47 being connected to the housing 10'. The resilient material or in this embodiment the shaped wire 28a is disposed within the elongate slot 45 pressing between the tang first end 320' and the rod 47. The resilient material 28 and 28b is operatively disposed in two places near the forward end 10a of the housing 10' in the forward cutout 180' sandwiching the tang first end 320' on both sides. The elongate cutout 45 and rod 47 are disposed generally towards the first end 320' behind the resilient material 28 and 28b biasing the middle 200' creating a pivot point for the element 12' to move about. The forward cut out 180' is shaped to accommodate this movement of the element 12' and tang 130' as detailed above.

In an unswitched state contact surface 60 is connecting the battery 22a to at least one indicating device by wiring (not shown) run through the port 25. The contact 60a being on the side wall 58' spaced away from the battery 22a is not in connection with the battery 22a and being in connection with at least one indicating device by wiring (not shown) run through the port 25. The indicating device in this embodiment is the LED light 30. In this embodiment the resilient material 28 and 28a disposed in the forward cutout 180' sandwiching the tang first end 320' retaining the element in the transverse direction 40 and 40a. The shaped wire 28a in the elongate slot being in a compressed state pushes on the rod 47 and tang 130' pushing the element 12' away from the housing 10' maintaining a distance between the battery 22a and the side wall contact 60a maintaining an unswitched state.

1
2 In use, as force is applied to the element 12' in an upward direction 40 or downward
3 direction 40a, the element 12' senses the force and is free to respond and move in relation
4 to the housing 10', by pivoting around the rod 47 compressing the resilient material 28 or
5 28b. The tang second end 340' moves in the opposite direction sliding under the battery
6 22a. The movement sensor actuator, in this embodiment the contact surface 60a mounted
7 on the tab side wall 58 makes contact with the battery 22a to actuate the electrical circuit
8 turning no less than one electrically operated indicating device. This embodiment includes
9 the light source 30, which illuminates the cutout 31. The element 12' is returned to an
10 unswitched resting position by the resilient material 28 or 28b.

11
12 As force is applied to the point 41 of the element 12' in a longitudinal direction in relation
13 to the housing 10', the element 12' senses the force and is free to respond and move in an
14 inward direction compressing the shaped wire 28a closing the distance between the side
15 wall contact 60a and the battery 22a to actuate the electrical circuit, turning no less than
16 one electrically operated indicating device. This embodiment includes a light source 30,
17 which illuminates the cutout 31. The element 12' is returned to an unswitched resting
18 position by the shaped wire 28a. Some advantages of this embodiment include ease of
19 manufacture, fewer parts, and multiple edge contact.

20
21 Referring now to FIG 5 is shown one embodiment of the simulated sharp edge weapon or
22 toy discussed above containing a structure to include any number of indicating devices.
23 The structure is identical to the preferred embodiment in FIG 1 previously detailed
24 including the light source 30 with the addition of an area or space 100 in the rearward end
25 10b of the housing 10. This space can be created by design of the housing 10 or through
26 simply shortening the tang 13. Some indicating devices include a buzzer, a sound chip to
27 alert with a voice or other sound, a wireless transmitting device, a scoring device or
28 counter or a combination thereof. These indicating devices are not shown in this figure due

1 to the known art of installing and wiring such devices. The scoring device or counter is
2 shown in FIG 6.

3
4 A wireless device or receiver is shown in FIG 7 as a computer to receive and convey
5 indication of movement of the element 12 as well as to keep score in a remote location.
6 Another embodiment of a wireless remote scoring device is shown in FIG 8 as a device to
7 receive and convey indication of one or more simulated sharp edged weapons or toys
8 movement of the element 12.

9
10 In use, when the element moves upon a strike, at least one indicating device will be
11 actuated as detailed above alerting in single or combination by buzzing, beeping, the
12 generated voice saying gotchya, strike, or other audible sound. The visual indicator being a
13 light source as well can accompany the sounds. In a competition or such, a competitor or
14 judge can check indication via a scoring device either locally in the housing 10 or a remote
15 location.

16
17 Referring now to the FIGS 9 through 9c is shown a number of elements consisting of
18 different structures that can be interchanged with other elements. The different tang
19 connections are shown for illustration. Tang connections can be interchanged within the
20 same tang connection or externally by design (not shown). FIG 9 is an element containing
21 the light source 30 mounted within the cutout 31 in the element 12 in combination with at
22 least a partially resilient structure 200 to evade injury upon contact of the element 12. The
23 resilient structure 200 in this embodiment is formed around the front and bottom edge
24 section and can be any number of shapes and designs for aesthetic and functional reasons.
25 In use, as the element contacts an object or body part the resilient structure 200 deflects to
26 soften the impact.

27
28 FIG 9A is an element showing another light indicating embodiment. The element is shown
29 with the light source 30 mounted in the cutout 31. A cutout 31b is in longitudinal

1 alignment and adjacent to cutout 31 connected by a port 31a. A port 31c starting at the port
2 31a continues on a bias to the edge of the element 12. In use upon activation the light
3 source 30 shines into and through the port 31a and into the cutout 31b illuminating cutouts
4 31, 31b and port 31a. The light source 30 also shines into no less than one port 31c ending
5 at the edge or edges of the element 12 illuminating the port(s) 31c providing a visual
6 indication in response to movement of the element 12. This design enables a better vision
7 of the light source when viewing the element from the edge.

8
9 FIG 9B shows another embodiment of the element 12 consisting of at least a partially light
10 conducting material 200. The element 12 is shown with the light source 30 mounted in the
11 cutout 31 within the partially light conducting material 210. This embodiment is shown in
12 combination with the partially resilient structure 200 formed around the front and bottom
13 edge section of the element 12. In use as the light source is actuated the partially light
14 conducting material is illuminated providing a visual indication in response to movement
15 of the element 12.

16
17 FIG 9C shows another embodiment of the element 12 consisting of the partially light
18 conducting material 200. The element 12 is shown with the light source 30 mounted in the
19 cutout 31 within at least a partially light conducting material 210. This embodiment is
20 shown with the partially resilient structure 200 encompassing substantially all of the
21 elements 12 circumferal edge. This structure presents a great deal of safety for use with
22 heavy contact. The light conducting material 200 provides a visual indication in response
23 to movement of the element 12.

24 25 26 CONCLUSION, RAMIFICATIONS AND SCOPE

27
28 Accordingly, the reader can see the simulated sharp edged weapon as described above
29 provides realism and feedback while maintaining a degree of safety in a simulated sharp

1 edged weapon. Accordingly, the invention provides a training weapon or toy that produces
2 a clearly recognizable sensory signal or signals in response to a force acting on the element
3 that can alert of contact or strike as well as being scored either locally or remotely from a
4 distance. The invention is also expandable in use through the adaptation of different
5 elements.

6 While my above description contains many specificities, these should not be construed as
7 limitations on the scope of the invention, but rather as an exemplification of some
8 presently preferred embodiments of this invention. Many other variations are possible. For
9 example, different cam arrangements, pivot points, mechanisms and placements of such
10 can be utilized. Many of the above teachings can be combined, interchanged or simplified
11 while still being within the scope of the claims. An example being the element may be
12 arranged to pivot or move in one direction only such that the indicating device is activated
13 when a force is applied to the elements longitudinal edge only.

14
15 The element may also be arranged to deploy from and return into a sheathed housing by
16 pivoting, sliding, folding, retracted, sprung or unsprung into and out of the housing. The
17 simulated weapon or toy can contain a pocket clip or lanyard. The simulated edged weapon
18 as described can be made from many materials and colors. The light source can be
19 concealed within the housing, illuminate a different color(s) and overall designs can widely
20 vary. The invention being mechanical and containing electronics can be made and arranged
21 in countless configurations. Accordingly, the scope of the invention should be determined
22 not by the embodiments illustrated, but by the appended claims and their legal equivalents.